

Know Your Watershed: Holmes Run • Tripps Run • Cameron Run



BIODIVERSITY ... THE VARIETY OF LIFE ON EARTH!!

WHAT IS BIODIVERSITY?

...it includes all living organisms and the ecosystems that sustain them...
...the full range of variety and variability within and among living organisms and the ecological complexes in which they occur;
...diversity occurs at *all* scales including:

WHY IS BIODIVERSITY IMPORTANT TO ME?

Species and ecosystems provide a wealth of essential goods and services upon which human well-being fundamentally depends. For example, did you know that 118 of the top 150 medicines in the United States were originally derived from plants!!!

However, because of our growing population and increasing consumption of natural resources, we are placing enormous stresses on our natural ecosystems and the species within them...

LOSING BIODIVERSITY!

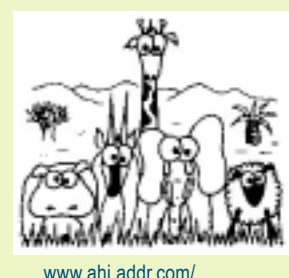
Genetic



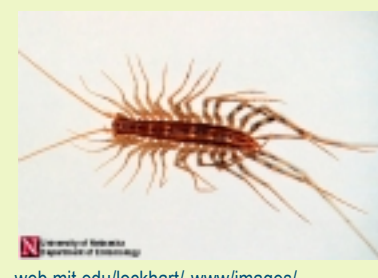
HOW ARE THE PEOPLE AROUND YOU GENETICALLY DIVERSE?



Species



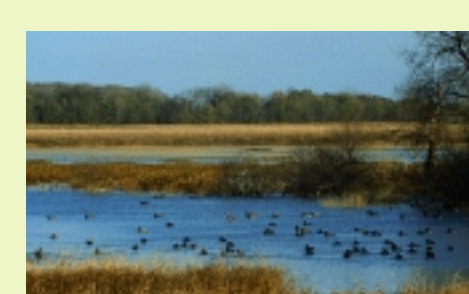
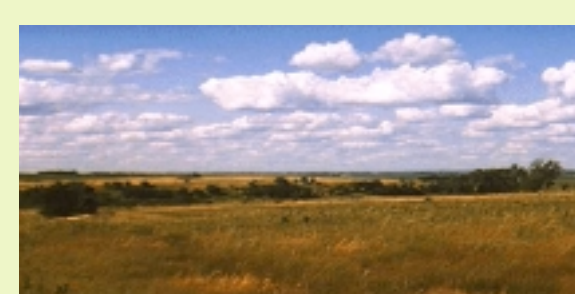
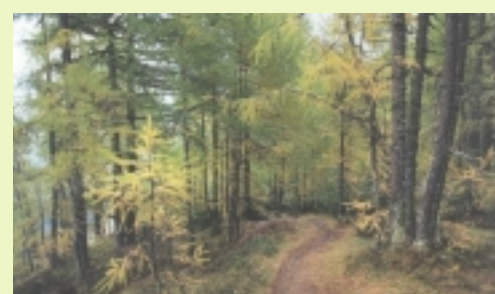
HOW MANY SPECIES DO YOU SEE IN YOUR NEIGHBORHOOD?



Community



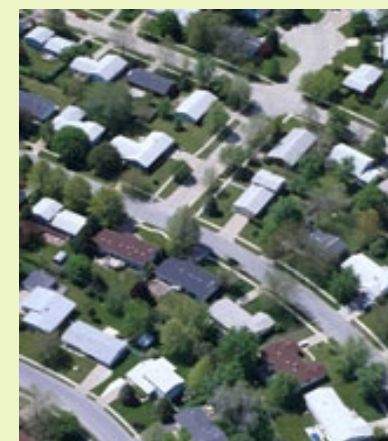
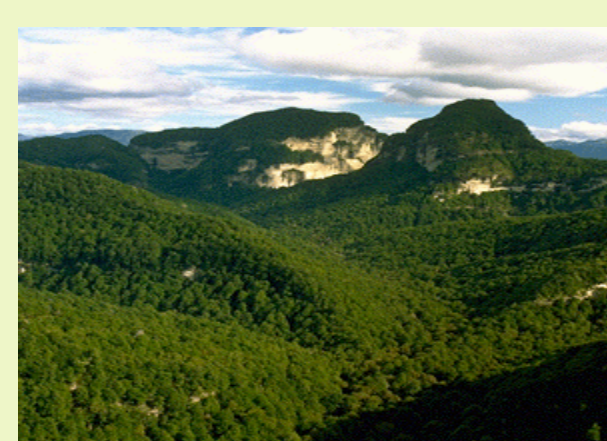
HOW MANY ECOLOGICAL COMMUNITIES CAN YOU NAME?



Landscape



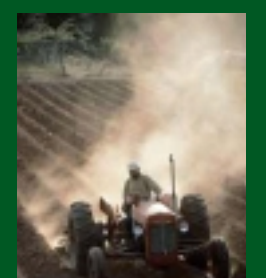
HOW MANY COMMUNITIES MAKE A LANDSCAPE?



Habitat Loss

- From clearing the land for:
construction
agriculture
forest harvesting
- Overuse of natural resources

Streams and wetlands are among our planet's most fragile ecosystems. They are being destroyed by development and pollution.



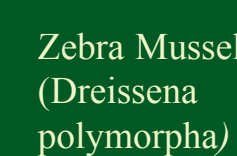
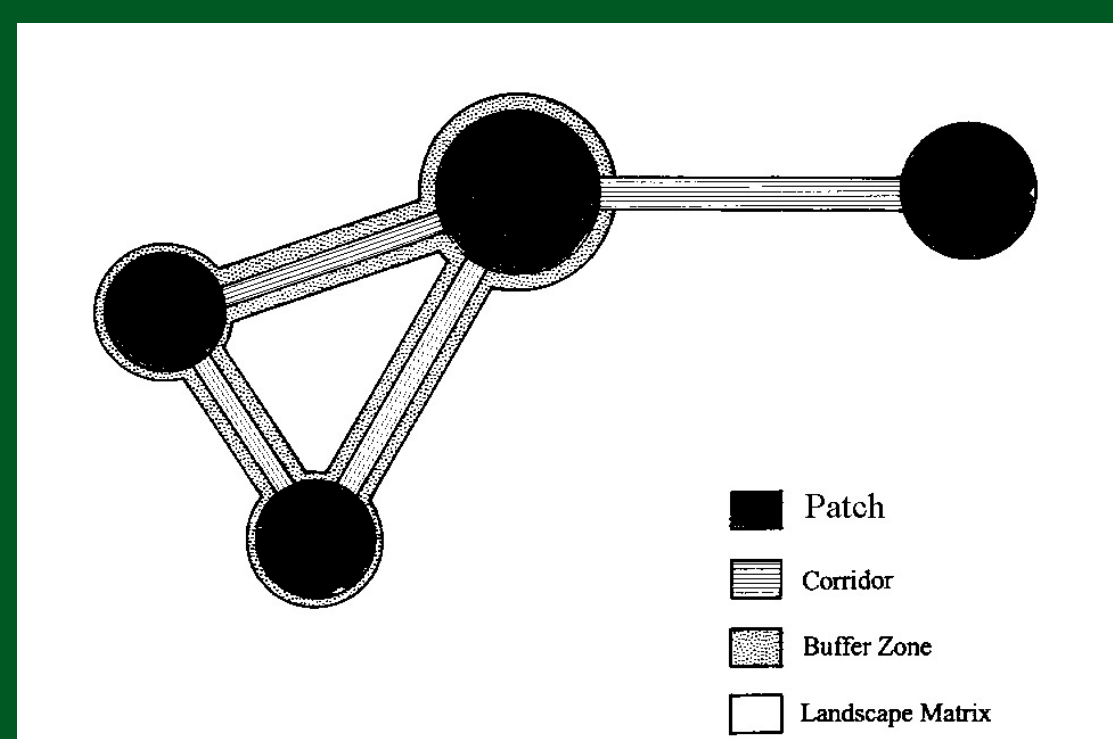
Invasive Species

- Invasive species are organisms that successfully establish themselves in native ecosystems and then take over.

BIODIVERSITY...IT'S ABOUT SPACE!!

WHERE SHOULD WE LOOK FOR DIVERSITY IN OUR WATERSHED?

Patches: Protected forest lands, lakes, wetlands, parks
Corridors: Riparian streams and greenways
Within the Matrix: The human dominated landscape (buildings, roads, etc.)



- They are transported to new areas by humans.
- Invasive species kill native species.
- The invasive species lower biodiversity by taking the place of many different native species that can't compete with the invaders.

Pollution and Over Use

- Pollution results in the contamination of soil, groundwater, and surface waterways.
- Pollution can kill sensitive species or harm habitats...just like it can harm us!
- The burning of fossil fuels in cars and for electricity also causes pollution and global warming, both of which put biodiversity at risk.
- Over-exploitation includes over-fishing and some agricultural practices that damage the environment. In addition, industrial agriculture can damage soil quality and drain water supplies.

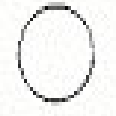
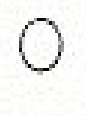


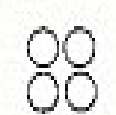

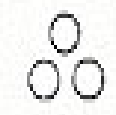





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KNOW BIODIVERSITY IN YOUR WATERSHED?

We live in an URBAN LANDSCAPE. In an urban area, roads, buildings, and parking lots use much of the land. Biodiversity is low in urban areas because there are few open spaces for good habitat to exist. **Look at the map...**the green areas are open spaces, the black areas are pavement, buildings, and parking lots, and the blue areas are streams and lakes.

What Patterns of Patches and Corridors Do You See?

When you look at a map, look for these signs of good habitat...

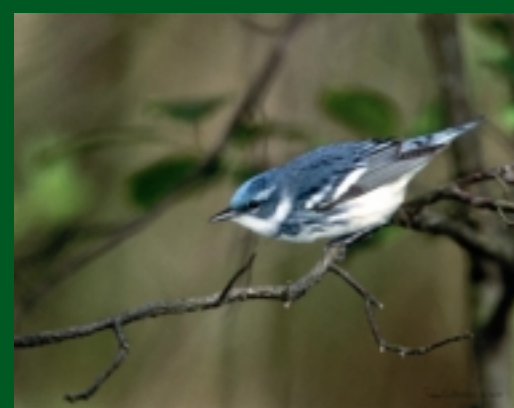
BETTER		WORSE	
	A		Bigger patches are better patches!
	B		One larger patch is better than many small patches!
	C		The closer together the better!
	D		A group is better than a line!
	E		Connect the Patches...that's the key!
	F		Patches make more habitat than corridors!

Peck, S., 1998. Planning for biodiversity: issues and examples. Island Press

Various Species in watershed



www.sccf.org/birds.htm
Little Blue Heron



www.jccardinal.com/large-cw.html
Cerulean Warbler



www.kidzone.ws/animals
Salamander



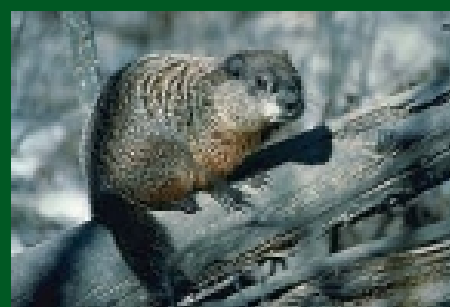
http://www.dor.state.va.us/dh/wheelon.htm
Swamp Pink (*Heliconia bullata*)



www.uvm.edu/~maur/curban.htm#into
Squirrel



www.uvm.edu/~maur/curban.htm#into
Sparrow



www.uvm.edu/~maur/curban.htm#into
Woodchuck



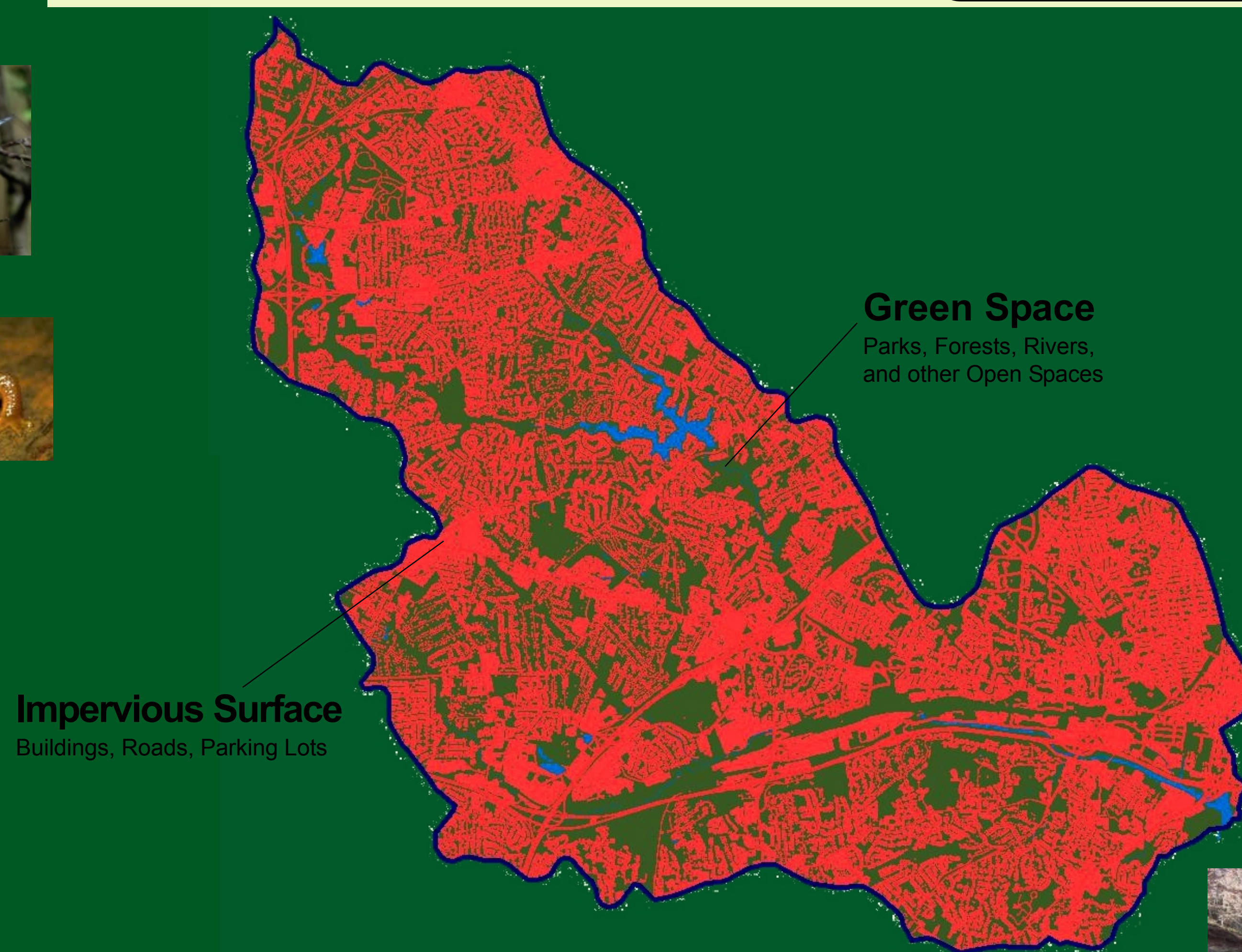
Fairfax County, Greenway Presentation, unpublished staff presentation, 2002



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WHAT CAN WE DO TO IMPROVE BIODIVERSITY?

WE CAN LINK THE PARKS, WETLANDS, FORESTS, RIVERS, AND OTHER OPEN SPACES TO MAKE...**GREENWAYS!**

Want To Know More...TRY THESE!!

Biodiversity Education Network (BEN):
<http://www.bioednet.org>

Earth Day Network Home:
<http://www.earthday.net>

Community Biodiversity Network (CBN):
<http://www.cbn.org.au>

Fight Against Invasive Species:
<http://www.invasivespecies.gov>

Adopt a Watershed: www.adopt-a-watershed.org

- Provide alternative transportation routes that connect people, communities, and the countryside.
- Help protect the quantity and quality of water, a natural resource vital to people, plants, and wildlife.
- Provide more opportunities to learn and play in nature.
- Increase food, shelter, and nesting places for wildlife.
- Provide rest stops for migrating wildlife.
- Preserve the biodiversity of plant and animal species by maintaining the *connections* between natural communities or *patches*.

•Fairfax County, Greenway Presentation, unpublished staff presentation, 2002